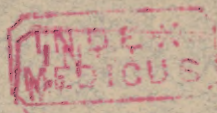


TUCKER (Jas. I.)

*Compliments of the author.*

*James I. Tucker*



HERPES ZOSTER FRONTALIS.

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## ART. II. CASE OF HERPES ZOSTER FRONTALIS.

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*(Read before the Chicago Society of Physicians and Surgeons, Sept. 11, 1876.)*

RECENT advances in neurological science are compelling us to pluck diseases, so to speak, one by one, from the positions they formerly occupied in this or that classification, and, on account of a more intimate acquaintance with their real character, to transplant them to a new and more appropriate field. In this new field, they have doubtless always belonged, and here they have been placed heretofore by shrewd, practical conjecture, though it has hitherto been impossible to determine their true position and relations, till the broader significance of neurotic influence was fully and truly recognized and understood. This is particularly true of many forms of cutaneous eruptions, especially the phlyctenoides, the most prominent of which is herpes zoster, whose peripheral manifestation has led it to be classified, until quite recently, as purely a disease of the skin. Neuro-pathologically considered, this disease is, however, as remote from a purely peripheral affection as epilepsy or tetanus, etc., the trophic changes which it presents being no less symptoms of internal disease than an epileptic or tetanic convulsion—the phenomena peculiar to the diseases named being determined by the nervous centre, which is the seat of the lesion, or irritation. To look upon this disease from an eccentric standpoint alone, and ignore or underestimate the fact that there is an irritation, or lesion, back of the external phenomena which produces the trophic changes of zoster, is to lose sight of the only rational guide to its therapeutics. It is of comparatively little importance to make a colored map of this disease, though it may furnish a very correct representation of its superficial appearances, presenting the character of its vesicles, with their gradual transformation

in the periods of development, maturation, decline and termination, for doubtless the identical kind of irritation or lesion, located elsewhere, would produce very different peripheral phenomena, and it is the internal disease, and not the superficial affection, which is the subject for treatment. Moreover, by referring this class of neuroses to the place where they belong, we dispose in a measure of the vexed subject of classification, for dermatology is not delineation and nomenclature, however much some writers on skin disease may like to make it so.

But without further preliminary remarks, I will proceed at once to report case of *Zoster Frontalis*, which has recently occurred in my own private practice.

CASE. Dr. X., aged 67, a retired dentist. Followed his profession unremittingly nineteen years, after which having secured a competency, he retired from active life and removed to a quiet suburban residence. In childhood and early manhood, he was "nervous" and delicate, but upon coming to the west his health improved, and he had no serious illness till 1854, when he was attacked with the "cholera," of that year, and came near falling a victim to it. He was one of those who suffered great losses by the Great Fire of 1871, and by the lesser one of 1874, and his old business activities were again called into play in the restoration of his buildings. This implied a severe draught on his muscular and nervous systems, he, working every day with hand and head, and being unusually exposed to wind and cold and wet, was for a time much exercised over his losses. I have noticed for years a slight movement of his head forward and to one side, not altogether normal; especially when he was in conversation, he always carried it a little toward the right side. He was the subject of a partial sun-stroke while he was living in the suburbs, and states that his head has never felt quite right since that time. There was a sensation of heaviness, a pressure, over his right eye, and he suffered more frequently from headache. On the evening of Jan. 12, 1876, I was called to see him. He had just returned from the city, having walked home, as was his custom, to his residence, now a distance of



nearly five miles. I learned that he had been suffering from frontal headaches for several days, and this evening upon arriving home, his pain was so intense that he concluded to summon his family physician. I found the pain to be mostly in the frontal region, but especially over and through the right eye, and of a violent neuralgic character. Morphine gave him temporary relief. On the next day the pain persisted in the same regions, and was of an aggravated character. On the third day pain was not so severe, and a dose of medicine given morning and evening, insured him a tolerably comfortable day and night. On the morning of the fourth day, on arriving at the house, his wife met me at the door and said: "Doctor, you will see a clear case of erysipelas up stairs." My patient was free from pain, but upon the right side of his forehead, extending from his temple to the median line exactly, and following this line along the hairy scalp to the occipital region, was a vivid erythematous redness, upon which were phlyctenæ arranged in clusters distributed at different points upon the forehead, in the supra-orbital region, upon the right eyelid and right side of the nose. There were several isolated vesicles larger than the rest, situated immediately to the right of the median line of the scalp. The ear was uninvolved. The eye was highly injected. Upon the opposite side of the median line of the forehead and scalp, the skin presented a perfectly normal appearance. Temp. 96, pulse 68. Tongue thickly coated and breath very foul. In time, some of the larger vesicles coalesced. The vesicles were first filled with a clear fluid; this fluid became milky, then purulent. The epidermis covering them broke with remarkable ease, and upon discharging its contents, left a highly vascular, inflamed base, which bled easily. Soon this base was covered with a thick brownish-black crust, which covered immense patches over the seat of the phlyctenous eruption, and over the eyelid to the extent of sealing the eye completely. As these crusts began to detach themselves at the edges, there was seen underneath a thick, stinking pus. If the slightest violence were exerted to detach them, the surfaces bled freely. The crusts, gradually, but very slowly,

desiccated and fell off, but were followed by others, thinner and lighter in color, which in turn detached themselves. Up to this time there was no pain, and the whole surface involved in the disease was insensible to touch or pressure.

On January 26, peculiar neurotic symptoms began to manifest themselves. At first, flashes of heat, alternating with sensations of cold, and when touched, sensations as if needles were pricking him. On Feb. 2, the sensations of heat had become extremely intense. They were at times almost insufferable, and caused the patient to cry out in agony: "Oh! oh! oh! oh! Fire! fire!! fire!!!" These paroxysms recurred at short intervals, but in the brief time between them there was comparative freedom from all suffering. On Feb. 7, I was called early in the morning. He had had a bad night. Had not slept. It seemed to him as if the right side of his head had been immersed constantly in boiling water. Bathing with tepid water to some extent mitigated this suffering. During the day, and succeeding days, the intervals between the paroxysms became longer and longer, and during these intervals he would even joke about the fiery furnaces, and the cauldrons of hot water into which his forehead was thrust or immersed. He said, it seemed as if there were a man and a woman engaged, away back in or behind his right eye, building fires; the former built a fire suddenly, with petroleum, the latter, more slowly, of light kindling wood, and he knew the instant they applied the match. The crust has for the most part disappeared, the site of the vesicular eruption is well marked by raised patches of lighter color than the surrounding skin, and now, after the sloughing of the epidermis, has become a large, ugly-looking, bleeding ulcer, co-extensive with the original boundaries of the eruption.

Feb. 8. The paroxysms of heat and cold sensations come less frequently, and have considerably lessened in intensity. His eyelids are still sealed closely, and the eye itself is extremely sensitive to light and pressure. New cuticle forming, highly congested, pulse 80. Paroxysms of heat sensations alternate with those of *extreme* cold, most intense between 4 and 9 a. m., and at the decline of day. Feb. 9. Slept poorly, usual



morning paroxysms did not recur. In good spirits; appetite good; eyelid can be slightly raised; orbit intensely congested; extremely sensitive to light. Sensations to touch over the forehead becoming normal. Some prickly feeling at times. Line of demarcation between sound and unsound side, as from the first, absolutely defined and impassable. Feb. 10. Slept poorly, occasional paroxysms of sensations of heat and cold. Feb. 11. Considerably improved. Slept well last night, though he persists in saying, that he does not sleep at all. Tongue coated, disinclined to talk. Seems much prostrated. Feb. 13-14. Patient still considerably exhausted. Sleeps during the day. "Fires" kindled from time to time, but do not blaze, pulse 100. Feb. 15-16. More comfortable.

February 23. Improving rapidly. Sits up two or three hours during the day. Appetite good, pulse 80. Cuticle reformed, but forehead within original boundaries continuously red. Cannot now feel my finger when it is placed upon the forehead over seat of eruption. Opposite side normal in every particular, and with the exception of a slight œdema of the left eyelid, has been so from the beginning. Knows whether cold water or hot is applied to forehead.

March 9. Doing well. Forehead paler, but still markedly red. Eyelids inflamed. Sensations of burning within the eye occasion much suffering.

March 18. Tendons of pyramidales contracted; conjunctiva nearly clear. Experiences difficulty in raising the right eyelid. p. 68. Sits up three hours a day.

April 1. The seat of the eruption becomes livid with congestion by the effect of light, noise, mental excitement, fullness of the bowels, etc.; the circulation in this part being remarkably easily influenced by these causes. p. 68. Temperature normal, sleeps well. Sits up and walks about the room. Occasional sensations as if electric shocks passed through his head, sometimes starting in the eye and passing to the occipital region and anon, taking the opposite direction. Now and then there is a slight feeling of constriction and suffocation about the upper thoracic region. Face slightly bloated on left side of nose and cheek.

June 1. Patient goes about the city. Is free from all abnormal sensations, except those of heat-flashes when he stoops, or when the circulation in the head is otherwise affected. The forehead within the circumscribed region, is still red, and a serrated line of demarcation still forms the dividing line between the sound and the affected side. There has been no delirium or other psychic disturbance from the beginning of the disease.

I made the last formal visit upon my patient, August 26th, 1876, and found him slowly but steadily improving, though like a thundercloud which has been scattered and driven away by the winds, and now and then exhibits angry flashes, and threatens once more to darken the blue sky, so some of the old sensations of heat, cold and tingling in mild degree are still a cause for complaint; even a stray vesicle now and then appears, and did we not know from the natural history of the disease, that it seldom recurs, we might apprehend a return of the original conditions and phenomena. The abnormal sensations are reproduced upon slight pressure over the skin on the side of the head which was the seat of the disease. Even if the tongue is placed upon the inner side of the cheek, a shock like an electric current passes through the side of the head. All the functions of the body seem otherwise to be normally performed. Pulse 72, temperature normal. Appetite good. Bowels regular. Urine normal.

The line of demarcation between the sound and affected side, is still distinctly visible, and the affected side is still redder than the other side. The eye-sight is weak, but probably not more so than before he was taken sick. There is no unusual sensitiveness to light.

In the history of a disease, like herpes zoster, which is of such frequent occurrence, it is seldom that we observe sensitive and trophic disturbances of such an aggravated character as appeared in the case I have just recorded, unless it be in zoster ophthalmicus, a form with which I was previously little acquainted. Zoster of the trunk and of the extremities, I had frequently seen, but an aggravated variety of zoster of the trigeminus, never before. So little notice of it is taken in the



English text-books, and so few cases are recorded in the foreign journals, that I believe it to be of comparatively infrequent occurrence. The sufferings of my patient were very great, and the *ignis sacra* of the ancients reminded him more, he said, of the veritable orthodox hell. I doubt whether the bare record of the case, as I have given it, can convey to the mind of the reader an adequate idea of the degree and amount of suffering which was experienced by my patient, when not under the influence of medicine.

Formerly, and even as late as the early part of the present century, zoster was supposed to be a form of erysipelas, but it was necessarily withdrawn from this category, when its definite limitation was contrasted with the erratic character of erysipelas. This constant feature of zoster is the most important in the differential diagnosis of the two diseases, though other features would be sufficient to distinguish it, even from those forms which most resemble herpes—erysipelas phlyctenoides, for example. In the latter disease, the vesicles are superincumbent upon an advanced degree of serous infiltration, while in zoster, the vesicles appear in the earliest stage of the eruption.

But the most important characteristic of the disease under consideration, is the neurotic. It is, doubtless, the most prominent of the neuroses which are attended with trophic disturbance in the skin. Its exact limitation to the region of cutaneous surface, corresponding to the terminal distribution of a particular cranial or spinal nerve, has drawn the attention of the medical world to this fact. Its localization and mechanism became more and more definite from information derived from isolated necroscopic examinations, till it passed beyond question, that the disease was referable aetiologically and pathologically to some form of destructive irritation involving, in different degrees in zoster of the trunk, etc., the inter-vertebral ganglion, and in zoster in the region of the distribution of the nervus trigeminus—of the first branch, more especially, the gasserian ganglion.

The conclusions of Bærensprung, which appear in Stricker's *Medizinische Jahrbuecher*, for 1876, in an article "Zur Aetiology des Herpes Zoster, by" Prof. Dr. Kaposi, are as follows:

That the brain cannot be the part involved, otherwise the eruption would extend over the entire body.

That the spinal cord cannot be the seat of the disease, otherwise the disease would be symmetrical, that is to say, on both sides of the body.

That we cannot attribute the disease to an affection of the peripheral nerves because the posterior, as well as the anterior, roots are found to be involved.

Consequently the disease must be referred to some deep-lying extra-cranial centre, namely, the ganglion.

Concerning the intimate nature of zoster, Jul. Parrot (*L'Union*, 27, 29, 30, 1856. *Schmidt*, 90-310) considers the disease as the result of a neuralgia—the eruption being only secondary. The frequency of intercostal zoster, he explains by the frequency of intercostal neuralgia.

Boeck (*On Diseases of the Skin*, 1855,) considers it due to a collection of blood-cells in the capillaries of the papillary bodies, causing stagnation of blood, and exudative processes. He found a neuritis, and considers pain due to trouble in the nerves.

Delieux, (*Gaz. de Paris*, 32, 33, 35, 39, 1855. *Schmidt* 89, 57,) recognized three factors in the production of zoster; viz., the condition of the blood, that of the digestive organs, and the participation of the nervous system. The richness of the blood in fibrine has been dwelt upon by Rayer. Delieux lays great stress on the catarrhal condition of the digestive organs in zoster; this is also noticed by Rayer. The frequency of zoster in summer and spring, when these diseases are common, is noticed. These observations must have been made more especially in regard to herpes of the trunk—though it is probable the aetiology and pathology of one form of zoster is true of all forms. A. Ollivier (*Gaz. Med. de Paris*, No. 44, 1872. *V. & H. Jahrbuch*.) found zona ophthalmica, with herpes in the region of the superior maxillary branch of the fifth pair. Kosmundski, (*Aerztl. Gesell. K. I.* 1874, *V. & H.*) describes a case in which, besides the skin alterations, there were œdema of the upper eyelid, conjunctival catarrh, inflammation of iris, and diminution of intra-ocular pressure.



He thinks, with Hutchinson, that the eye only is implicated when the cutaneous alterations involve the region of the nasociliary nerves. The diminished ocular pressure he explains, according to Hippel, as a result of irritation of the superior cervical ganglion of the sympathetic.

Further recent utterances on the subject are a confirmation of the fact, that the disease is of neurotic origin. In the July number of the *AMERICAN JOURNAL OF MEDICAL SCIENCES*, for instance, may be found the following by Dr. L. Duncan Bulkley. His conclusions are too important not to find a place in a paper on zoster.

"1. Whatever may be the cause of the nerve irritation," he says, "herpes zoster is always of nerve origin—that is, it is "an inflammatory lesion of the skin, wherein the local cell "action, resulting in the production of vesicles, is but a result "of nerve influence, a perverted cell action caused by per-  
"verted innervation.

"2. From the almost constant changes found in the ganglion developed on the posterior, or sensitive roots of the "spinal nerves of the affected regions, we must infer that the "trophic changes observed in the skin have to do with the "sensitive nerves, which marks a certain advance in the study "of the physiological relations of the trophic nerves, or nerves "of nutrition.

"3. We are not to conclude, however, that zoster is the result of inflammation of the sensitive ganglia alone, for the "entire nerve on the distal side of the ganglion, has been always found to be inflamed, and abundant proof exists of "eruptions of zoster due to various nerve lesions, peripheral "and central, injuries and disease of the transmitting nerves, "and of the cord, and the encephalon.

"4. In certain cases, the origin may be shown to be idiopathic inflammation of conducting nerves, (as in Kaposi's "case,) or they may be effected by pressure, or other alteration "caused by the presence of a tumor, or the disease may be the "result of surgical, or other injury.

"5. The origin, therefore, of herpes zoster is a direct nerve "irritation, and inflammation, and in ordinary, apparently

“idiopathic cases, the explanation of this is to be sought for  
“in the same causes as give rise to neuralgias in general, some  
“of which are traceable, many are not. The gouty habit, in-  
“ducing neuralgia, can likewise give occasion to herpes; the  
“direct exposure to cold of the terminal branches of a nerve,  
“as in the head and neck, or elsewhere, can cause painful ex-  
“citation of the nerve itself, or neuralgia, and is equally a  
“cause of zoster; malaria can originate neuralgia, and may not  
“therefore, some of the cases of zona be due to a malarial in-  
“fluence? Certainly the prompt action of citrate of iron, and  
“quinia, in some cases, might point to a malarial element.

“6. In considering, then, the true nature of herpes zoster,  
“we are rather led away from the skin lesion to the antecedent  
“neuritis, whose manifestations are neuralgia, more or less  
“marked, and disturbances of sensation in the area of nerve  
“distribution represented by hyperalgesia, hyperæsthesia, and  
“anæsthesia; while, at the same time, other results of nerve dis-  
“turbance may occur, as paralysis of muscle, trophic alter-  
“ations in the tissues, and even necrosis, and separation of  
“bone. In other words, the eruption of zoster is an epi-  
“phenomenon to a primary neuritis, and neuralgia.

“7. The clinical history and therapeutics of herpes zoster  
“are in themselves almost convincing proofs of the neurotic  
“nature of the disease. In most cases, especially in younger  
“patients, the treatment is purely expectative; while in severe  
“cases, and in elderly persons, the neuralgia is the principal  
“element requiring attention, and this is remedied by meas-  
“ures directed to the nervous system. In the majority of in-  
“stances, the nerve irritation, or inflammation, subsides spon-  
“taneously, the whole train of morbid phenomena occupying  
“about the same length of time taken by other self-limited  
“inflammations, as pneumonia and erysipelas, while under  
“certain circumstances the *sequelæ* require attention, as in  
“other diseases. The local destruction of tissue is sometimes  
“a troublesome feature in the way of ulceration, or necrosis  
“of the skin, or the neuralgia persists to a distressing degree,  
“even under the most intelligent treatment.”

A very interesting paper concerning the nature of Herpes



Zoster Frontalis, which furnishes a peculiarly fitting supplement to the case under consideration, was lately read before the *K. K. Gesellschaft der Aerzte*, of Vienna, by Dr. H. Sattler.\* After calling attention to the fact that in Herpes Zoster, in the course of the trigeminus, it is almost always the first branch, the ophthalmicus which is affected, and to the frequency first noticed by Hebra of the coincidence between Zoster in the course of the ophthalmicus with affection of the eye, he goes on to describe a case which was carefully observed by him, and which afterwards he had an opportunity to examine anatomically.

The patient was a man 85 years of age, who 14 days before his admission to the hospital, had been found in his room in an unconscious condition, in consequence of breathing coal-gas. He was restored to consciousness, and on the fourth day afterward, had neuralgia of the right side, in the region of the frontal nerve; several days after, a swelling on the forehead, upon which still later a zoster eruption appeared, and simultaneously disturbance of vision. The eruption appeared on the forehead, the side of the nose, the eyelid, and in isolated patches upon the temple. He died in another ward, whither he had been transferred on account of a cystitis. Upon post-mortem examination, there was found in the brain, lungs and kidney, an atrophic condition of marked degree, chronic cystitis, prostatic hypertrophy. The dura mater was thickened, the vessels of the brain widened. The trigeminus of the right side felt softer and more succulent. The ganglion gasseri of the affected side was more succulent than normal, grayish-red, the normal color being pale-yellow. Neither about the ganglion, nor on the trigeminus, was there a trace of an extravasation of blood. Upon closer inspection, the 2d and 3d branches, after their passage out of the ganglion, were found to be perfectly normal; the first branch, on the contrary, was round, succulent, grayish-red, its fibres pressed, as it were, asunder, and the branches of the ophthalmicus presented a like appearance, as far as they could be traced in the

\*Protokoll der Sitzung von 28 Oct., 1876. *Stricker, Anz. d. K. K. Gesell. der Aerzte in Wien.*

orbit. The ciliary ganglion was gray, its surroundings thickened. These were the macroscopic appearances. Upon microscopical examination, the changes in the ganglion gasserii were found to consist in infiltration of the interstitial connective tissue, with round cells, in a regressive metamorphosis of the ganglionic cells, completely destroying them, transformation of the tissues surrounding the ganglion into a homogeneous mass, and finally degeneration of the nerve-fibre beyond recognition. These changes involved only that part of the ganglion gasserii which contributed to the formation of the first branch, and only those fibres were degenerated which had their origin in the ganglion. The cells of the ganglion ciliare were nearly intact, but its connective tissue was abundantly infiltrated with round cells. The entering nerve-branches were rich in degenerated fibres. The out-going ciliary nerves were affected to their last ramification; the more intensely, the nearer they were to the ganglion.

There are two theories named in Sattler's paper explaining the proximate causation of the singular phenomena of zoster. Snellen's theory is that a neuritis extends from the ganglion to the terminal distribution of the nerve in the skin and eye, analogous to retrobulbar neuritis following retinitis. The second theory is, that it is an affection of specific (trophic) nerves. Sattler concludes that trouble in these nerves, originating in and passing out of the ganglion, is the real cause of zoster.

The position resting upon pathological facts, though not as yet demonstrated by physiological experiment, is nevertheless growing in general recognition and acceptance, that there is a separate and distinct set of nerves, whose function it is to preside over nutrition, to regulate and control it. These are called the trophic nerves, and the question is ably discussed by neuro-physiologists, among the most prominent of whom is Samuel (Die trophische Nerven). After collecting a great number of facts, clinically and experimentally observed, he arrives at this broad generalization (*Haupt resultat*) that the principle of nutrition lies in the cell and the measure of it in trophic nerves, *p.* 352). Dr. Sattler was led to conclude that this is the true explanation of the trophic alterations of



zoster, among other reasons, because in his case the neuritis gradually *decreased* as it extended from centre to periphery. Of course the sensitive fibres are also affected directly or indirectly, otherwise we could not account for the neuralgia, and other disturbances of sensation.

Before concluding, I wish to mention another variety of zoster, which at the present day is attracting considerable attention, and shedding light upon the pathology of the disease. I refer to zoster traumaticus.

An illustrative case is reported by Dr. O'Risel, of Halle.\* The patient was a somewhat anæmic, poorly nourished woman thirty-six years of age, whose mamma and axillary glands had been excised. After the operation, secondary hemorrhage set in which rendered it necessary to reopen the wound to tie a number of small arteries. This was on the 11th and 12th of November. On the 14th there was a burning pain of the fore arm, especially in the ulnar region. On the 15th the skin over the region of the ulnar, as far as the palm of the hand, was covered with an eruption which at first resembled urticaria. In the evening, clusters of vesicles made their appearance upon an inflamed and swollen surface which extended three fingers in width from the condylus internus to the palmus manus. The inner side of the arm was free from the exanthem. On the 16th, the herpetic eruption ceased to extend, the contents of the vesicles became purulent and the surroundings paler—the pain in the forearm diminishing. After two or three days, the exanthem had dessicated and healed upon the formation of thin crusts, some painful sensations remaining.

As a rule, considerable time elapses between the wound and the appearance of the herpetic eruption. Dr. O'Risel quotes the two exceptional cases reported by Bohm, in the *Jahrb. f. Kinderheilk., N. F.* 11. 1869, p. 22, in which the early local symptoms appeared immediately—the first zoster of the finger,—after violent exercise in the gymnasium, the second zoster lumbæ-abdominalis in a boy, after repeated jumping from a

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\**Deutsche med. Wochenschrift, June 10, 1876.*

high chair. Thus a slight traumatic effect upon the nerves is sufficient to elicit an eruption of zoster.

I will not extend the limits of this paper by reciting Erb's experiments on dogs and rabbits, (*Deutsch. Archiv. f. Klin. Med.* V. p. 42) in which the nervous and trophic alterations peculiar to zoster followed intentional injury to the nerve trunk.

Returning to our own case, I have now only room left for a *résumé*. I have said that although cases of herpes zoster have appeared frequently in the course of my practice, the particular variety under consideration was comparatively novel. Its character was so marked, that I did not feel justified in letting it remain unrecorded. I have said that there is a remarkable dearth in the English literature on the subject, and I should add that the clinical cases which come to necroscopic examination are rare the world over. I was particularly delighted to find that Dr. Sattler had not failed to faithfully observe and communicate to the profession his case which presented the most prominent points of interest exhibited by this remarkable disease.

I would add a few remarks concerning the therapeutics of zoster, were it not so plainly indicated by its pathology. Given the pathology, it is of very little importance to add more when writing for medical men. Anodynes are clearly indicated to mitigate the suffering. Bromide of potassium was of signal service to me in the treatment of my case. Quinia met the condition of periodicity. Local applications were worse than useless, and electricity has not yet been given an adequate trial. Beard and Rockwell say that herpes yields rapidly to central galvanization. It might be added that in the great majority of cases there is an intrinsic tendency to speedy recovery.

Bulkley says that three therapeutic agents seem to have a marked control over herpes zoster, whose cutaneous manifestations, as well as painful element, they appear to arrest; viz., phosphorus, given early to abort the disease; electricity, the galvanic current passed directly through the affected nerves, their trunks and peripheral distributions, to abort the eruption and dry up the newly formed vesicles much sooner than otherwise, besides pretty certainly checking the pain. And quinia, which combined with iron, shortens the duration much and



relieves the unpleasant symptoms. All these, it will be observed, should be used early in the disease. "Whether," he continues, "ergot, which has been of great service in neuralgia in the hands of some, would check this congestive neurosis, I cannot say, but should hope much from it. The hypodermic injection of morphia, as we know, relieves the neuralgia, and, if used early and repeatedly, might abort the disease by checking the nerve-irritation, especially if conjoined with atropia. Painting the surface with collodion, or colloid coating containing morphia would serve the same purpose. Some assert that it is a very valuable measure. Ordinarily the only local treatment required is protection of the inflamed surface, and this is best accomplished by powdering it with starch and keeping a single thickening of muslin firmly applied, and left on until the vesicles are dried."

My own experience, limited as I have stated, was decidedly against local applications of every kind,—and, I think, I gave those which are recommended above a faithful trial with the effect only to aggravate the symptoms,—except upon the anæsthetic surface, in the very earliest ages of the disease, to facilitate the drying of the vesicles.

It is a problem which I have yet to solve, how to dispose of the distressing *sequelæ* which are still persisting.

I have thus taken occasion to review the subject of zoster as far as my limits would permit, and the many other important points suggested by my case and recorded in recent medical literature, I must reserve for another occasion.

In my opinion there is sufficient ground to warrant us in concluding that—

1. Zoster is one of the neuroses.
2. The primary seat of the disease is the ganglion. Of zoster frontalis it is the ganglion of Gasser. The trigeminal nerve is affected secondarily, and finally, the skin by inflammation. The 2d and 3d branches are generally intact.
3. The peculiar character of the cutaneous affection (nutritive) would seem to indicate that a special kind of nerve is principally, involved namely the trophic.







